

CLAIMS

What is claimed is:

1. A universal joint comprising:
 - a yoke including a leg having an inboard surface and an outboard surface with an aperture extending between said inboard and outboard surfaces, said aperture being defined by an inner surface, said inner surface including an annular groove;
 - a bearing cup positioned in said aperture;
 - a retention member disposed within said annular groove; and
 - a spacer disposed between said bearing cup and said retention member.
2. The universal joint of claim 1 wherein said spacer includes a laterally extending rim.
3. The universal joint of claim 2 wherein said inner surface further includes an annular seat between said annular groove and said inboard surface.
4. The universal joint of claim 1 wherein said aperture includes an inboard radial wall and an outboard radial wall, said inboard radial wall defining a plurality of stake grooves and said outboard radial wall defining said annular groove.
5. The universal joint of claim 1 wherein said retention member and said spacer have a combined thickness such that said bearing cup is located in approximately a balanced position within said aperture.

6. The universal joint of claim 1 wherein said inner surface includes an inboard radial wall, an outboard radial wall, and an annular seat extending inwardly from the inboard radial wall and terminating at the outboard radial wall.

7. The universal joint of claim 6 wherein said spacer engages said annular seat.

8. A method for servicing a staked universal joint with a replacement bearing assembly, a spacer and a retention member, wherein said universal joint has a yoke defining an aperture and a plurality of stakes within the aperture for retaining an original bearing assembly and wherein said aperture includes an annular groove, said method comprising the steps of:

removing the stakes;

removing the original bearing cup from the aperture after removing the stakes;

inserting the replacement bearing assembly into the aperture after removing the original bearing assembly;

inserting the spacer into the aperture; and

coupling the retention member to the annular groove after inserting the spacer, said spacer being disposed between the replacement bearing assembly and the retention member.

9. The method of claim 8 wherein the method further includes the step of selecting one of the retention member and spacer such that the replacement bearing assembly is located in an approximately balanced position when said retention member is coupled to the annular groove.

10. The method of claim 8 wherein the step of removing the stakes includes cutting the stakes with a cutting tool.

11. The method of claim 10 wherein said step of removing the stakes further includes the steps of aligning said cutting tool within the aperture and cutting the stakes with said cutting tool so that said stakes are substantially flush with the inboard radial wall.

12. The method of claim 11 wherein the cutting has teeth and wherein said step of aligning the cutting tool further includes the step of aligning the teeth between the stakes and wherein said step of cutting the stakes includes rotating the cutting tool.

13. The method of claim 8 wherein said aperture includes an annular seat and wherein said method further includes the step of pressing the bearing cup and spacer into the aperture until the spacer engages the annular seat.

14. The method of claim 8 wherein said method further includes the step of providing a service kit having the spacer, a cutting tool, and the retention member.

15. The method of claim 14 wherein said service kit further includes a first and second retention member, said first and second retention members having different thicknesses.

16. The method of claim 14 wherein said service kit further includes a first and second spacer, said first and second spacers having different thicknesses.

17. A service kit for servicing a staked universal joint having a yoke with an aperture for receiving a replacement bearing assembly and wherein the aperture includes an annular groove, said service kit comprising:

a retention member sized to fit within the annular groove;

a spacer sized to fit between said retention member and the replacement bearing assembly.

18. The service kit of claim 17 further including a cutting tool.

19. The service kit of claim 18 wherein said cutting tool further includes a plurality of teeth and an outer tool surface, said teeth including an outer tooth surface parallel to said outer tool surface.

20. The service kit of claim 19 wherein said teeth further include an inner tooth surface, said inner tooth surface being angled relative to said outer tooth surface.

21. The service kit of claim 20 wherein said inner tooth surface has an angle between 40 and 60 degrees, relative to said outer tooth surface.

22. The service kit of claim 18 wherein the aperture includes a plurality of stakes engaging an original bearing cup, each of said stakes being radially spaced in said aperture and wherein said cutting tool includes a plurality of teeth, said teeth being spaced to fit between the stakes.

- 23. The service kit of claim 18 further including a removal tool.
- 24. The service kit of claim 17 wherein said retention member is a snap ring.
- 25. The service kit of claim 17 wherein said spacer includes a laterally extending rim.
- 26. The service kit of claim 17 further including a replacement cruciform.